IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: **Seetharaman et al.**	§	
	§	Group Art Unit: **3629**
Serial No. **09/966,200**	§	
	§	Examiner: **Araque Jr., Gerardo**
Filed: **September 27, 2001**	§	
	§	
For: **Isolating User Interface Design**	§	
from Business Object Design Using	§	
Java Interface Concepts		

Commissioner for Patents
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37945
PATENT TRADEMARK OFFICE
CUSTOMER NUMBER

REPLY BRIEF (37 C.F.R. 41.41)

This Reply Brief is submitted in response to the Examiner's Answer mailed on December 13, 2007.

No fees are believed to be required to file a Reply Brief. If any fees are required, I authorize the Commissioner to charge these fees which may be required to IBM Corporation Deposit Account No. 09-0457.

RESPONSE TO EXAMINER'S ANSWER

In the Examiner's answer, the Examiner makes numerous incorrect assertions regarding the claims, the law, and the teachings of the references. Therefore, this reply brief is needed.

I.   Refutation of the Examiner's First Response

In response to the fact that *Beckett et al.*, System and Method For Visual Application Development Without Programming, U.S. Patent 6,564,368, May 13, 2003, (hereinafter "*Beckett*") does not teach several features of claim 1, the Examiner responds that:

> As a further note, the Examiner understands the applicant's invention to only be various interfaces with various sub-systems, or objects, wherein each interface contains a type of sub-system and that each sub-system is isolated from one another. The sub-systems use their respective interface to communicate to one another and to other parts of the system. The Examiner asserts that although Beckett does not disclose the exact arrangement or the same title of each of the sub-systems, as disclosed by the applicant, Beckett does disclose that multiple interfaces can be used with their respective objects (Column 6 Lines 20 - 27). Each object communicates to one another through some interface.

Examiner's Answer of December 13, 2007, p. 10.

Claim 1 is presented again below for convenience:

> 1.   A method of developing a computer software system, comprising the computer-implemented steps of:
> defining a first interface associated with a proposed view sub-system and with a proposed business logic sub-system, wherein the proposed view sub-system and the proposed business logic sub-system interact only via the first interface;
> defining a second interface associated with a proposed handler sub-system and with the proposed business logic sub-system, wherein the proposed handler sub-system and the proposed business logic sub-system interact only via the second interface;
> wherein the proposed view sub-system, the proposed business logic sub-system, and the proposed handler sub-system are all isolated from each other;
> creating the proposed view sub-system in accord with the first interface; and
> creating the proposed handler sub-system in accord with the second interface.

The Examiner fundamentally misunderstands the application of the law of obviousness to claim 1. The prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Royka,* 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Thus, the assertion that, "Examiner understands the applicant's invention to only be various interfaces with various sub-systems, or objects, wherein each interface contains a type of sub-system and that each sub-system is isolated from one another," even if technically correct (which it is not), is simply insufficient to result in the determination of obviousness of claim 1. If assumed to be true, the simple fact that *Beckett* teaches tools for creating the claimed invention does not mean that *Beckett*, as modified by the Examiner, teaches all of the features of claim 1. As stated below, and in the appeal brief, *Beckett*, as modified by the Examiner, simply does not teach or suggest all of the features of claim 1. Therefore, under the standards of *In re Royka*, the Examiner failed to state a *prima facie* obviousness rejection against claim 1.

Beckett's method for visual application development without programming does not teach or suggest the features of claim 1. *Beckett* broadly states that business logic, data translations, expressions, and other algorithms can be visually modeled using the interface manager. Applications are constructed by connecting the properties of desired programs using the Connection Editor graphically without any source code programming. *Beckett*, col. 3, ll. 25-50. However, *Beckett* does not teach the claimed feature of, "defining a first interface associated with a proposed view sub-system and with a proposed business logic sub-system" as recited in claim 1. *Beckett's* disclosure makes no reference to defining a first interface associated with a proposed view sub-system and with a proposed business logic sub-system. Thus, *Beckett* also does not suggest defining a first interface associated with a proposed view sub-system and with a proposed business logic sub-system as recited in claim 1.

Additionally, *Beckett* makes no mention that his disclosure can be applied to business logic sub-systems. *Beckett* makes no mention of any of the features of claim 1. Indeed, *Beckett* teaches away from claim 1.

The Examiner may not assume that one of ordinary skill could use *Beckett* to achieve the invention of claim 1. Applicants specifically challenge the Examiner's assertion in this regard, and challenge the Examiner to find any reference indicating that *Beckett* could be used to achieve the specifically recited features of claim 1.

In any case, *Beckett*, considered as a whole and as modified by the Examiner, does not teach or suggest all of the features of claim 1. Therefore, under the standards of *In re Royka*, no *prima facie* obviousness rejection can be stated against claim 1.

II.   Refutation of the Examiner's Second Response

In response to the fact that *Beckett* does not teach defining interfaces and subsystems, *in the claimed manner*, the Examiner states that:

> Applicant's argument that Beckett does not teach defining interfaces and subsystem is incorrect. The step of defining each of these components has obviously already been done in order for Beckett to carry out the invention, i.e. the programming of these components has already been done. Beckett teaches communication of these components with one another and that one skilled in the art would know that there are numerous methods of associating each of these devices depending on the client's needs as well as the amount of resources available.

Examiner's Answer of December 13, 2007, p. 11.

The Examiner cites the following portion of *Beckett* to support this assertion:

> "The Connection Editor 203 shows the status of connections between programs and allows end-users to create connections between programs **(Column 5 Lines 23 - 25).**
>
> Thus, Interface Manager 410 only requires a reference to another components interface manager and the name of the connected interface property as the minimum information to establish a connection between interface properties. With this information, the information managers of each component can automate data flow between the components without programming. One ordinarily skilled in the art would know that this is just one of numerous ways that a connection editor-or any program capable of querying data from class meta- . data, internal-storage, or external storage-could query available connection points from a program **(Column 8 Lines 17 -** 27)."

Examiner's Answer of December 13, 2007, pp. 10-11 (emphasis in original).

Beckett teaches an editor that shows the status of connections between programs and allow users to create connections between programs. The interface manager requires a reference to another component interface manager and the name of the connected interface property. With this information, the information managers of each component can automate data flow between the

components without programming.

However, *Beckett* does not teach defining interfaces and sub-systems *as claimed*. For example, the claimed first and second interfaces are associated with proposed view sub-systems and handler subsystems, respectively. No basis exists to assume that *Beckett* teaches or suggests creating these types of "interfaces." In fact, *Beckett* does not teach or suggests this type of interface. Furthermore, *Beckett* does not teach or suggest the claimed subsystems. *Beckett* does not teach or suggest a business logic sub-system or a handler sub-system. The disclosure simply does not exist.

Additionally, *Beckett* does not teach or suggest defining the full feature of, "a first interface associated with a proposed view sub-system and with a proposed business logic sub-system." *Beckett* does not teach or suggest the second interface that acts only via the second interface, as in claim 1. *Beckett* does not teach or suggest that the sub-systems are isolated, as in claim 1.

The Examiner assumes, without any basis or support, that one of ordinary skill would find using *Beckett* to achieve this arrangement obvious. Applicants challenge this assertion. The Examiner has no basis to assume that the claimed arrangement is obvious in view of the fact that *Beckett **is utterly devoid** of any disclosure regarding the arrangement of the claimed features*. Therefore, no rational reason exists to achieve the legal conclusion of obviousness. Hence, the Examiner failed to state a *prima facie* obviousness rejection against claim 1

Additionally, as shown above, *Beckett* does not teach or suggest what the Examiner asserts *Beckett* to teach. Therefore, the Examiner failed to state a *prima facie* obviousness rejection against claim 1 or any other claim in this grouping of claims.

III.   Refutation of the Examiner's Third Response

The Examiner's asserts that the claimed arrangement of systems is a "design choice," stating:

> Furthermore, the exact configuration that the applicant is trying to claim is only a design choice that is performed by the programmer. The applicant argues that, "In an analogy, the Examiner is effectively stating that a particular house constructed with a hammer is obvious because hammers are known in the art. Under the examiner's logic, one of ordinary skill would conclude that *any particular structure of the house* would be "obvious," no matter how ingenious the structure, simply because a patent directed to a hammer states that hammers can be used in the construction of the houses **(See Page 20 of 28 ¶2).**" However, the Examiner asserts that one does not

get a patent on the design of a house since it is only a design choice, i.e. the cosmetic features made on the house would not affect the structural strength or integrity of the house. Further still, the Examiner notes that the applicant has not provided any advantageous reasoning as for the specific arrangement of the applicant's invention. Essentially, the applicant is stating that one should be allowed to receive a patent because Inventor A decided to use Inventor B's method of nailing roof shingles in order to nail pink roof shingles to a house and despite the fact that both are using the same method of using a hammer to carrying out the nailing process Inventor A has rights to a patent because Inventor B is using blue roof shingles.

Examiner's Answer of December 13, 2007, pp. 11-12 (emphasis in original).

Applicants challenge the assertion that the claimed arrangement is a matter of "design choice." This assertion is fundamentally wrong.

Furthermore, the Examiner has the burden of showing that the claimed arrangement is a "design choice" and is obvious in view of *Beckett*. (The Examiner bears the burden of establishing a *prima facie* case of obviousness based on prior art when rejecting claims under 35 U.S.C. § 103. *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992)). In view of the fact that *Beckett is utterly devoid* of disclosure regarding the arrangement of features of claim 1, and is further devoid of disclosure regarding the above-identified features of claim 1 itself, the Examiner has *no basis* to make the assertion that the claimed arrangement is a design choice.

Still further, outdated maxims, such as "design choice," have been replaced by the mandated test for patentability under 35 U.S.C. § 103 provided by the U.S. Supreme Court in *KSR Int'l. Co. v. Teleflex, Inc.*, No. 04-1350 (U.S. Apr. 30, 2007). The court states that:

> In determining obviousness, the scope and content of the prior art are… determined; differences between the prior art and the claims at issue are… ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or non-obviousness of the subject matter is determined. *Graham v. John Deere Co.*, 383 U.S. 1 (1966). Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.
> …

Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.

Id.

Notice that "design choice" is not one of the requirements for determining obviousness. Instead, obviousness requires a holistic approach supported by reasoned analysis, not conclusory statements. In the case at hand, the Examiner asserts that the claimed arrangement is *conclusory*. The Examiner has provided no basis for this assertion other than the Examiner's personal opinion, which is also not a valid basis for asserting a rejection under 35 U.S.C. § 103.

Still further, the Examiner's analogy belies the Examiner's fundamental misunderstanding of the law of obviousness. If pink shingles were novel and non-obvious, then they would indeed render a claim to a house made with such shingles patentable. "Design choice" is not the deciding factor in the decision of patentability in this case. Instead, a court will look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether ***there was an apparent reason to combine the known elements*** in the fashion claimed by the patent at issue. Design choice is ***irrelevant*** to determining obviousness; rather, ***a reason to combine*** is the language used by the Court.

Yet further, the Examiner's analogy fails because the Examiner's analogy is directed to cosmetic features of a house, rather than the structure of the house itself. The Examiner incorrectly assumes that claim 1 is directed to cosmetic structures in the house. Instead, in Applicant's analogy, the features of claim 1 represent the *structures* with which the house is built.

The Examiner believes that the claimed features represent cosmetic features; however, this assertion is simply wrong. Even if the Examiner's assertions regarding the teachings of *Beckett* were true (a contested point), the *structure of the software architecture built represents structures of a house in the analogy*, not cosmetic features.

In any case, the Examiner has put forth no proper reason to achieve the *legal conclusion* that the claimed arrangement is obvious in view of *Beckett*, but rather offers only the Examiner's unsupported personal opinion. Therefore, the Examiner failed to state a *prima facie* obviousness rejection against claim 1.

Additionally, as shown above, *Beckett* does not teach or suggest what the Examiner asserts *Beckett* to teach. Therefore, the Examiner failed to state a *prima facie* obviousness rejection against claim 1 or any other claim in this grouping of claims.

IV.   Refutation of the Examiner's Fourth Response

The Examiner states that:

> As a result, the Examiner that the specific arrangement being claimed by the applicant is only a design choice and that one having ordinary skill in the art who is relying on the teachings of **Beckett** would have found it obvious that various configurations can be accomplished. One of ordinary skill in the art would have been aware of both the advantages and disadvantages that different configurations would provide. Consequently, **Beckett** does, indeed, provide the necessary teachings and freedom to allow one of ordinary skill in the art to devise applicants claimed configuration if the configuration proved to provide the advantage of providing a system that is of high-quality and efficiency.

Examiner's Answer of December 13, 2007, p. 12 (emphasis in original).

The Examiner has offered no rational basis for the assertion that the specific arrangement being claimed is a "design choice." The Examiner has offered no support for this assertion. The Examiner has only offered the Examiner's unsupported personal opinion that one of ordinary skill would recognize the advantages and disadvantages different configurations would provide. In further view that the Examiner has the burden of proving otherwise, the rejection fails to comport with the requirements of *KSR Intl.*, described above. Accordingly, the Examiner failed to state a *prima facie* obviousness rejection against claim 1.

Additionally, as shown above, *Beckett* does not teach or suggest what the Examiner asserts *Beckett* to teach. Therefore, the Examiner failed to state a *prima facie* obviousness rejection against claim 2 or any other claim in this grouping of claims.

V.   Refutation of the Examiner's Fifth Response

Regarding claim 2, the Examiner states that:

> The applicant argues that **Beckett** fails disclose the limitations found in claims 2 - 10, 12, 13, and 15 - 18. Specifically, the applicant argues the **Beckett** fails to teach, "... defining a third interface ... " and "... creating the proposed view sub-system in *accord with both the first and third*

> *interfaces."* However, as discussed above, the applicant is only claiming
> additional interfaces with their respected sub-systems and where the
> subsystems are in communication with one another through their respective
> interfaces. The Examiner again asserts that one of ordinary skill in the art
> would have been aware of both the advantages and disadvantages that
> different configurations would provide. As a result, Beckett does, indeed,
> provide the necessary teachings and freedom to allow one of ordinary skill in
> the art to devise applicants claimed configuration if the configuration proved
> to provide the advantage of providing a system that is of high quality and
> efficiency.

Examiner's Answer of December 13, 2007, pp. 12-13 (emphasis in original).

Again, the Examiner has offered no basis for the assertion that one of ordinary skill would be aware of the advantages and disadvantages that different configurations would provide. The Examiner has offered no basis for the assertion that the *specifically claimed arrangement* would be recognized by one of ordinary skill as being a mere "different configuration." Thus, the Examiner still relies on conclusory statements that violate the requirements of *KSR Intl*. Therefore, the Examiner failed to state a *prima facie* obviousness rejection against claim 2.

Additionally, as shown above, *Beckett* does not teach or suggest what the Examiner asserts *Beckett* to teach. Therefore, the Examiner failed to state a *prima facie* obviousness rejection against claim 2 or any other claim in this grouping of claims.

VI. Refutation of the Examiner's Sixth Response

The Examiner states that:

> Moreover, evidence that the applicant has not provided any concrete
> reasoning of why this specific configuration is advantageous can be seen in
> claim 4, 11(e), and 12 where the applicant is providing yet another interface
> with its associated sub-systems.

Examiner's Answer of December 13, 2007, p. 13.

Applicants are under no burden to prove that the specific configuration is advantageous. Instead, the Examiner has the burden to show that the claimed configuration is obvious. As shown above, the Examiner has not done so, but rather has substituted personal opinion and unsupported assertions for the analysis required by *KSR Intl*. Therefore, the Examiner failed to state a *prima facie* obviousness rejection against claim 2.

Additionally, as shown above, *Beckett* does not teach or suggest what the Examiner asserts *Beckett* to teach. Therefore, the Examiner failed to state a *prima facie* obviousness rejection against claim 2 or any other claim in this grouping of claims.

VII.   Refutation of the Examiner's Seventh Response

In response to the fact that the Examiner has provided no reason to modify the reference, the Examiner states that:

> 20. The applicant argues that the Examiner has not provided sufficient reasoning of why Beckett would provide sufficient reasoning for the modifications discussed above. However, as discussed above under the headings Claim 1, Claim 2, as well as in the Final Office Action the Examiner has already provided. sufficient reasoning and rationale. The applicant further states, "Because one of ordinary skill knows that *numerous ways* exist to connect subsystems, one of ordinary skill also knows that no *reason exists* to *assume that* one *particular combination* of *connections should be adopted over another combination.*" However, as already discussed above, one of ordinary skill in computer programming would have been aware of the various combinations that are available to them and the advantages that each combination presents. Further still, the Examiner asserts on the level of detail that would be required would be dependent on the available resources that is available to the programmer. That is to say, if a programmer has very limited resources the programmer would not be encouraged to create so many interfaces and sub-systems and would have a more difficult time to isolate a compatibility or programming error while a programmer who has limitless resources would be encouraged to create as many interfaces and subsystems as possible in order to better isolate any compatibility or programming errors that may occur.

Examiner's Answer of December 13, 2007, pp. 13-14.

The fact that one of ordinary skill is aware that countless combinations exist does not mean that any given combination is obvious. The Examiner must prove that the *specifically claimed* combination is obvious. The Examiner has given no *specific reason* why the *specifically claimed* combination is obvious.

Additionally, the statement that "a programmer who has limitless resources would be encouraged to create as many interfaces and subsystems as possible in order to better isolate any compatibility or programming errors" is both wrong and irrelevant. First, the statement is wrong. Computing resources are limited, even if defining the interfaces between software objects is easy. To efficiently use computing resources, programmers must efficiently create programs; thus, those

of ordinary skill would strive to create efficient software systems. Still further, creating as many interfaces and subsystems as possible would not better isolate compatibility or programming errors. Instead, creating many interfaces and subsystems would lead to _more_ issues with compatibility and errors – because the relationships among the software components become more complex.

Second, the statement is irrelevant to the determination of obviousness of the claims. Again, the Examiner is relying on overly-broad assertions regarding the capabilities and desires of those of ordinary skill in the art. The Examiner must provide a _specific_ reason to achieve the legal conclusion that the _specifically claimed arrangement_ is obvious in view of _Beckett_. The Examiner has not done so, instead relying on the nebulous and unsupported assertion that the claimed arrangement would be considered a design choice.

In any case, the Examiner has failed to provide a rational reason to reach the _legal conclusion_ that claim 1 is obvious. Therefore, the Examiner failed to state a _prima facie_ obviousness rejection against claim 1

Additionally, as shown above, _Beckett_ does not teach or suggest what the Examiner asserts _Beckett_ to teach. Therefore, the Examiner failed to state a _prima facie_ obviousness rejection against claim 1 or any other claim in this grouping of claims.

VIII. Refutation of the Examiner's Eighth Response

In response to the fact that _Beckett_ teaches away from the claimed invention, the Examiner states that:

> Applicant argues that **Beckett** "teaches away" from the claimed invention. Specifically, the applicant argues that **Beckett** does not teach isolating sub-systems through the use of interfaces. Further, as claimed, creation of the sub-systems is in accordance with a respective interface and not a standard interface technique. However, the Examiner asserts that all of these components must be made in accordance with one another and that the sub-systems must be made in accordance with the interfaces. If not, then compatibility issues would arise and one of ordinary skill in the art of programming is well aware of this situation. **Beckett** discloses, "... programs that implement the standard interface can then by dynamically connected to the program that calls the interface. This allows for high degree of modularity since there could be many programs supporting a standard interface yet with unique implementations that gives the program using the interface the ability to take advantage of many unique implementations to a single problem. The Connection Editor 203 has a common mechanism to

> interact with all programs, allow for the interrogation of the interface of
> disparate programs, permit the establishment of connections between
> disparate programs, and automate the data flow between the interfaces of
> disparate programs when connections have been established **(Col. 6 Lines
> 43 - 54)**." As a result, it would have been obvious to one of ordinary skill
> that the sub-systems must be in accordance to their respective interfaces in
> order to enable the system, if not, compatibility issues would arise.

Examiner's Answer of December 13, 2007, pp. 14-15 (emphasis in original).

The Examiner's assertion that "all of the [claimed] components must be made in accordance with one another and the subsystems must be made in accord with the interfaces" is wrong. The Examiner assumes, without basis or support, that one of ordinary skill would believe that compatibility issues would arise as a result. Again, the Examiner is wrong.

Those of ordinary skill know that objects in programming can be isolated from each other without creating compatibility issues. The undersigned attorney performed a simple search on the GOOGLE® search engine to verify this fact. The Board is invited to do the same.

Still further, the Examiner must examine the claimed subject matter, not the subject matter the Examiner believes to be possible. If the Examiner believes the claimed subject matter to be inoperable, then the proper rejection would be under 35 U.S.C. § 112, First Paragraph, not 35 U.S.C. § 103. Applicants note, however, that the specification provides ample support for claim 1, and those of ordinary skill would be properly appraised of the scope of claim 1.

Additionally, the Examiner's citation to *Beckett* supports the fact that *Beckett* teaches away from claim 1. *Beckett* teaches integrating objects, not isolating them. Thus, even if the claimed features were equivalent to *Beckett's* teachings (an assertion Applicants dispute), *Beckett* teaches away from the isolating feature of claim 1.

A reference may be said to "teach away" from the claimed invention when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant. *In re Gurley*, 27 F.3d 551, 553, 31 U.S.P.Q.2D 1130, 1131 (Fed. Cir. 1995). In this case, *Beckett* leads those of ordinary skill in a direction divergent from the path taken by the Applicant.

Therefore, *Beckett* teaches away from the invention of claim 1. Accordingly, the Examiner failed to state a proper reason to achieve the legal conclusion of obviousness of claim 1 under the standards of *KSR Intl*. Hence, the Examiner failed to state a *prima facie* obviousness rejection

against claim 1 or any other claim in this grouping of claims.

Additionally, as shown above, *Beckett* does not teach or suggest what the Examiner asserts *Beckett* to teach. Therefore, the Examiner failed to state a *prima facie* obviousness rejection against claim 1 or any other claim in this grouping of claims.

CONCLUSION

As shown above, the Examiner has failed to state valid rejections against any of the claims. Therefore, Applicants request that the Board of Patent Appeals and Interferences reverse the rejections. Additionally, Applicants request that the Board direct the Examiner to allow the claims.

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